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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/594,636

Filing Date: September 28, 2006

Appellant(s): OHTA ET AL.

John W. Fitzpatrick
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12/9/08 appealing from the Office action mailed 5/16/08.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2004/0040217	TAKASHINA et al	3-2004
WO 2005/007770	W.R. GRACE & Co.-CONN	1-2005

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-18 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over WO 2005/007770.

The WO reference teach in the abstract, sections [0020], [0028], [0039] and [0044] and the claims, a semiconductor polishing composition comprising 20 weight percent fumed silica, wherein the fumed silica has a particles size distribution as set forth at least in the abstract. As can be seen from the above passages, the composition can either (1) contain no particles above 100 nm or (2) contain particles above 100 nm in any amount less than 20 volume percent (i.e. 10% or less). In view of this, the claimed invention is anticipated by the reference because the reference teaches a composition that comprises the claimed specific distribution of fumed silica particles.

With respect to the maximum frequency, this reference teaches a maximum size which reads on the claimed maximum frequency.

With respect to claims 6, 7 and 15-18, applicants use process limitations to define the product and "product-by-process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964.

In the alternative, the subject matter (size distribution) as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549; *In re Wertheim* 191 USPQ 90 (CCPA 1976).

Claims 1-3, 5-8, 12, 13, 15, 16 and 18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Takashina et al. (217).

Takashina et al. teach in the abstract, sections [0036] and [0047] and the claims, a semiconductor polishing composition comprising 5-30 weight percent fumed silica, wherein the fumed silica has a particles size distribution as set forth at least in the abstract. As can be seen from the above passages, the composition can either (1) contain no particles above 100 nm or (2) contain particles above 100 nm in any amount less than 10 volume percent. In view of this, the claimed invention is anticipated by the reference because the reference teaches a composition that comprises the claimed specific distribution of fumed silica particles.

With respect to claims 6, 7, 15, 16 and 18, applicants use process limitations to define the product and "product-by-process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964.

In the alternative, the subject matter (size distribution) as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549; *In re Wertheim* 191 USPQ 90 (CCPA 1976).

Claims 4, 9-11, 14 and 17 are rejected under 35 U.S.C. 103(a) as obvious over Takashina et al. (217).

With respect to the maximum frequency, this reference teaches a maximum size which encompasses the claimed values and thus the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549; *In re Wertheim* 191 USPQ 90 (CCPA 1976).

With respect to claim 17, applicants use process limitations to define the product and "product-by-process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964.

(10) Response to Argument

Before responding to appellants arguments, it is noted that the claimed size of "a content of the fumed silica having a particle diameter of 100 nm or less is 15% or more" is broadly interpreted that "a content of the fumed silica having a particle diameter of 100 nm or less" can

be 100% (as is apparent from the phrase "15% or more). In view of this, the claims broadly recite that all of the particles have a size of 100 nm or less.

Examiners response to appellants arguments with respect to Chu in part A subparts 1-2 of the brief:

Appellants argue that the WO reference (Chu et al.) teaches that the composition (1) must contain particles larger than 100 nm and (2) is directed to colloidal silica, and as a consequence, this reference fails to teach fumed silica having the claimed size distribution. These arguments are not persuasive because (1) the reference teaches that the abrasive can have less than 1% of the particles larger than 100 nm (see section [0028], etc.) and it is well known that less than includes zero, thus the broad interpretation of the reference is that no particles larger than 100 nm are present (see claims coupled with section [0028]) and this clearly reads on the distribution defined by the instant claims; and (2) section [0020] clearly discloses that the abrasive is fumed silica. If the reference clearly teaches fumed silica, it can not teach away from this material because a "preferred" teaching is not a teaching away of other abrasives. In addition, it is to be noted that the dependent claims do not exclude particles larger than 100 nm, assuming arguendo. Finally, it is to be noted that claims 1-7 and 11-16 and section [0028] of the reference define "an abrasive" with the described characteristics and it is clear from section [0020] that the abrasive intended could be fumed silica.

Appellants also argue section [0009] of the reference in that this section recognized the problem associated with fumed silica. This is not persuasive because this section does not clearly define that these particles are problematic. Assuming further arguendo, this does not

negate the fact that the reference still teaches that fumed silica can be used as the abrasive.

Appellants also argue that section [0052] as well as tables II and III show that colloidal silica provides the greatest removal rate. Although this may be true (1) as defined above, the reference specifically states that fumed silica can be used as the abrasive and (2) a reference is not only limited to the disclosure in the examples.

Appellants also argue that in section [0020], the shape of the fumed silica particles is defined as jagged, irregular shape. It is to be noted that this section makes no mention of the shape and appellants are presumably referring to section [0009] since this section refers to the shape of fumed silica. However, appellants arguments about the shape are not persuasive because (1) as defined above, the reference specifically states that fumed silica can be used as the abrasive and (2) appellants would appear to be arguing limitations (i.e. the shape) not claimed.

Examiners response to appellants arguments with respect to Chu in part A subpart 3 of the brief:

Appellants argue that Chu does not teach the “maximum frequency” but rather disclose that particles having a diameter of 60-90 nm are present (see figure 1). This is not persuasive because (1) with respect to the maximum frequency, this reference teaches a maximum size (i.e. 100 nm) which reads on the claimed maximum frequency range and (2) a size of 90 nm, which appellants admit (see above), would also read on the claimed maximum frequency range.

Examiners response to appellants arguments with respect to Takashina et al. in part B subparts 1-2 of the brief:

Appellants argue that Takashina et al. does not teach (1) fumed silica and (2) the claimed size and content of the silica, and as a consequence, this reference fails to teach fumed silica having the claimed size distribution. These arguments are not persuasive because (1) the reference teaches that the abrasive can be fumed silica (section [0036], as applicants admit), (2) the abrasive (fumed silica) is used in an amount of 3-40% of the composition and (3) the amount of silica (fumed silica) having a size of less than 100 nm is within the claimed range, as is evident by parts (i) and (ii), at least, as is defined in the abstract of the reference. If the reference clearly teaches fumed silica, it can not teach away from this material because a "preferred" teaching is not a teaching away of other abrasives. Appellants also appear to argue that this reference uses particles having a size above 100 nm (i.e. 200 nm). This is not persuasive because (1) it is to be noted that the dependent claims do not exclude particles larger than 100 nm and (2) the distribution defined by the reference for part (iii) in the abstract is 75 nm or more and less than 200 nm, thus the broad interpretation of this is that part (iii) can be 80 nm (i.e. no particles larger than 100 nm). Appellants argument about larger particles being defined by the reference is not understood because, as is clearly outlined in the reference, all of the particles can be less than 100 nm. Even if such particles larger than 100 nm are present, they are present to the extent of 10% by volume (see reference abstract), as can be seen from the instant claims, this still reads on the claimed distribution.

Appellants argue that Takashina et al. does not teach the "maximum frequency". This is not persuasive because (1) with respect to the maximum frequency, this reference teaches a maximum size which encompasses the claimed values and thus the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was

made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549; *In re Wertheim* 191 USPQ 90 (CCPA 1976).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Michael Marcheschi

/Michael A Marcheschi/

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